

SQL Commands

To understand the commands in SQL, let us consider a one question and will execute all possible commands and their constraints.

Question : Create a database by the name **school**. In the database **school** create two tables **student** and **fees**. The data as shown below as reference.

student } → **Table 1**

Rollno	Name	Gender	Marks	DOB
1	PRATIK	M	95	22-Apr-2003
2	GARIMA	F	85	05-Mar-2004
3	KHUSHI	F	92	24-Jan-2003
4	BABU	NULL	NULL	15-Aug-2000
5	AMIT	M	60	26-Jan-2002
6	SHARMILA	F	90	12-Dec-2003

fees } → **Table 2**

Rollno	Name	Fees	Attendance
1	PRATIK	5250.00	98
2	GARIMA	1250.00	70
4	BABU	1250.00	75
6	SHARMILA	5250.00	85

To get started on your own database by the name **school**, we can first **check** whether it is exist or not exist in MySQL server.

1.	<p>Show Databases: It is used to display all the databases which is already been created and stored in MySQL server by using the command SHOW DATABASES.</p> <p>Syntax: SHOW DATABASES;</p> <p>Example: mysql>SHOW DATABASES;</p> <p>Result: Displayed all databases.</p>
<p>If database school is not seen in the list displayed, then proceed to point no.2 else point no. 3.</p>	
2.	<p>Creating Databases: It is used to create a database in RDBMS by using CREATE DATABASE command. (<i>only first time</i>)</p> <p>Syntax: CREATE DATABASE <database_name>;</p> <p>Example: mysql>CREATE DATABASE school;</p> <p>Result: Creates database with the name school.</p>
<p>If database school is seen in the list displayed, then proceed to point no. 3.</p>	
3.	<p>Opening Databases: Once a database is created, next time you need not to create once again just you need to open it to work on it by using USE command.</p> <p>Syntax: USE <database_name>;</p>

Example:

mysql>USE school;

Result:Database changed. i.e **school** database is opened.

To delete any database from MySQL server.

4. Removing Databases: It is used to delete a database along with its table by using **DROP DATABASE** command.

Syntax: DROP DATABASE <database_name>;

Example:

mysql>DROP DATABASE school;

Result: Database deleted. i.e **school** database is deleted.
(to verify use the command show databases;)

Assume database **school** is created and ready to work on it. Now next step is to create a table **student** and **fees** with structure in a database.

5. Creating a Table: It is used to create a table in a database by using **CREATE TABLE** command.

Syntax: CREATE TABLE <table_name>

{

<column_name1><datatype>[(size)],

<column_name2><datatype>[(size)],

.....

<column_name5><datatype>[(size)],

};

Example:

```
mysql> CREATE TABLE student
{
  Rollno int(2) PRIMARY KEY,
  Name varchar(20) NOT NULL,
  Gender char(1),
  Marks numeric(6,2),
  DOB date
};
```

Result: Table **student** is created.

Similarly table fees also to be created

```
mysql> CREATE TABLE fees
{Rollno int(2), Fees decimal(6,2), Attendance smallint };
```

Result: Table **fees** is created.

To verify that the table has been created or not, SHOW TABLES command to be used.

6. Viewing a Tables: It is used to view/ display the name of the tables present in a database by using the command **SHOW TABLES**.

Syntax: SHOW TABLES ;

Example:

```
mysql>SHOW TABLES;
```

Result: Displayed all the tables present in the database. i.e Both tables **student** and **fees** will be listed.

To view a table structure, DESCRIBE command to be used.

7. **Viewing a Table Structure:** It is used to view/ display the structure of the tables by using the command **DESCRIBE**.

Syntax: DESCRIBE<table name> ;

Example:

mysql>DESCRIBE student;

Result: Displayed the structure of the table **student** as shown below:

Field	Type	Null	Key	Default	Extra
RollNo	int(2)	NO	PRI	NULL	
Name	varchar(20)	NO		NULL	
Gender	char(1)	YES		NULL	
Marks	numeric(6,2)	YES		NULL	
DOB	date	YES		NULL	
5 rows in set (0.01 sec)					

To change/ modify the table structure, ALTER command to be used.

8. **Alter a Table Structure:** It is used to modify/ change the structure of the tables by using the command **ALTER**.

8.1 Adding a new column to an existing table.

Syntax: ALTER<table name>ADD(<column name><datatype>[(size)] ;

Example:

mysql>ALTER table student ADD (Mobile integer);

mysql>ALTER table student ADD (Address varchar(25));

Result: New column **Mobile** and **Address** is added into the table.

8.2 Adding a new column into a table with default value.

Syntax:

```
ALTER TABLE <table name> ADD (<column name>
<datatype> default data);
```

Example:

```
mysql>ALTER TABLE student ADD (City char(10) DEFAULT 'KOLKATA');
```

Result: New column **City** is added with default value as “KOLKATA” into the table.

8.3 Modifying an existing data type of a column / Column definition.

Syntax:

```
ALTER TABLE <table name>
MODIFY([column_name]<datatype>);
```

Example:

```
mysql>ALTER TABLE student
->MODIFY Name varchar(15);
```

Result: The data type **varchar(20)** of a column **Name** is modified to **varchar(15)**.

8.4 Rename a column.

Syntax:

```
ALTER TABLE <table name>
CHANGE([old column_name] [new column_name]<datatype>);
```

Example:

```
mysql>ALTER TABLE student
->CHANGE Marks Percent numeric(6,2);
```

Result: The column **Marks** is changed to **Percent**.

Note: Some SQL version **RENAME** or **MODIFY** also can be used in place of **CHANGE**.

8.5 Removing a Column.

Syntax:

ALTER TABLE <table name>

DROP <column_name>;

Example:

```
mysql>ALTER TABLE student
->DROP Address;
```

Result: The column **Address** is deleted.

The modification and changes carried out in the table structure (from 8.1 to 8.5) can be observed as per point no. 7.

```
mysql>DESCRIBE student;
```

Field	Type	Null	Key	Default	Extra
RollNo	int(2)	NO	PRIMARY	NULL	
Name	varchar(15)	NO		NULL	
Gender	char(1)	YES		NULL	
Percent	numeric(6,2)	YES		NULL	
DOB	date	YES		NULL	
Mobile	int(11)	YES		NULL	
City	char(10)	YES		KOLKATA	
7 rows in set (0.01 sec)					

Now keep the structure of the table as per the question given in beginning. Remove extra thing which was carried out to learn the commands. Now we will learn how to insert the data into the table.

9. **Inserting Data into a Table:** It is used to insert a new record/ row/ tuple in a table by using the command **INSERT INTO** .

First Method :

Syntax: INSERT INTO <table name>
VALUES(value1, value2, value3.....value5);

Example:

```
mysql>INSERT INTO student
      VALUE(1, "PRATIK", 'M', 95, '2003-04-22');
mysql>INSERT INTO student
      VALUE(2, 'GARIMA', 'F', 85, '2004-03-05');
mysql>.....
```

Second Method :

Syntax: INSERT INTO <table name> (column1, column2....)
VALUES(value1, value2....);

Example:

```
mysql>INSERT INTO student (RollNo, Name, Gender, Marks, DOB)
      VALUE(3, "KHUSHI", 'F', 92, '2003-01-24');
mysql> INSERT INTO student (RollNo, Name, Gender, Marks, DOB)
      VALUE(4, 'BABU', 'NULL', NULL, '2000-08-15');
mysql>.....
```

Result: All the records are inserted into the table student as shown below:

Student

Rollno	Name	Gender	Marks	DOB
1	PRATIK	M	95	22-Apr-2003
2	GARIMA	F	85	05-Mar-2004
3	KHUSHI	F	92	24-Jan-2003
4	BABU	NULL	NULL	15-Aug-2000
5	AMIT	M	60	26-Jan-2002
6	SHARMILA	F	90	12-Dec-2003

To delete the rows from the data stored in the table.

10. **Removing data from a table:** It is used to delete a rows/ record from a table by using the command **DELETE**.

Syntax: DELETE FROM <table name>[WHERE <condition>];

Example 1:

mysql>DELETE FROM student WHERE name='BABU';

Result 1: Particular record/row will be deleted where name **BABU** is found.

Example 2:

mysql>DELETE FROM student;

or

mysql>TRUNCATE TABLE student;

Result 2: Both the command will delete all the rows from the student table. The difference is **DELETE** doesn't free the space whereas **TRUNCATE** free the space containing the table.

Sometimes we may need to physically remove a table which is not in use. **DROP TABLE** command is used to delete a table permanently. But it cannot be deleted if it contains records. So, first delete all the rows of the table (DELETE FROM student;) and only then can the table be deleted.

11. Delete a table: It is used to delete a table permanently by using the command **DROP TABLE**.

Syntax: DROP TABLE <table name>;

Example:

mysql> DROP TABLE student;

Result : Particular table **student** will be deleted from **school** database. You can verify the same by using command. **SHOW TABLES**.

Now you can create a table **fees** and inset the data into it as per the question given.



Thank you

